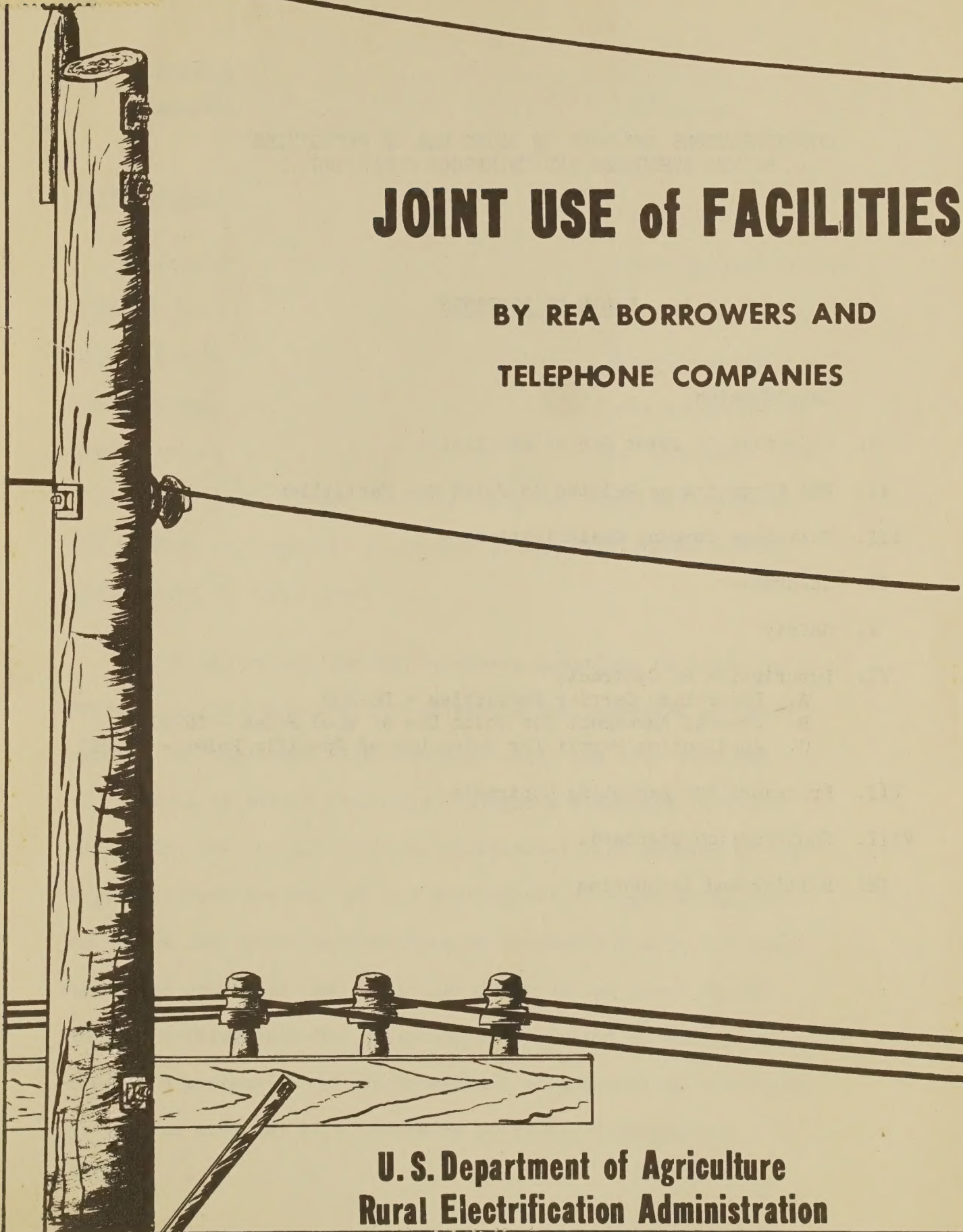


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JOINT USE of FACILITIES

**BY REA BORROWERS AND
TELEPHONE COMPANIES**



**U. S. Department of Agriculture
Rural Electrification Administration**

CONSIDERATIONS INVOLVED IN JOINT USE OF FACILITIES
BY REA BORROWERS AND TELEPHONE COMPANIES

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CONSIDERATIONS INVOLVED IN JOINT USE OF FACILITIES
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Introduction

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Joint use of facilities by power and telephone systems has been found to be feasible in rural areas with the development of high strength telephone wires that can match rural power line spans and the development of generally accepted construction standards and safety devices to minimize any possible hazards. The power line carrier telephone system, wherein the power wires act as guides for carrier radio waves, is another recent development having application in rural areas.

Joint use raises for REA borrowers questions of policy with respect to (1) protecting and advancing the interests of their members in connection with telephone rates and area coverage, (2) uniform relations with local telephone companies in their areas that may include mutuals, independents and members of the Bell Telephone System, and (3) development of engineering, construction and operating practices in cooperation with the local telephone companies that will make joint use an asset to all. Joint use raises for REA questions with respect to use of loan funds and protection of the Government's interests in borrowers' systems as they may be affected by joint use arrangements.

The joint use contract forms, copies of which were distributed to all borrowers with the Administrator's memorandum of July 3, 1947, were designed to include desirable legal, business and technical factors to provide adequate protection for REA borrowers and to establish a practical working framework for relations between REA borrowers and their local telephone companies when they wish to engage in joint use of facilities.

I. Objective of Joint Use of Facilities

The primary objective of joint use of facilities is to achieve savings in cost by eliminating one pole line. Elimination of structural conflicts as well as local regulations may also require or make joint use desirable.

The costs as well as the savings of joint use construction should be shared equitably by the power and telephone suppliers. Where the savings are appreciable, it can well mean that both services can be extended into areas where construction might not otherwise be economically feasible. Therefore, even though power system poles are already in place and can accommodate telephone facilities with little, if any, extra cost, telephone companies should be required to make payments representing their fair share of the costs of the poles so that savings can accrue to the consumers of electricity as well as to the telephone subscribers. In other words, the power consumers should not be asked to subsidize telephone subscribers.

II. REA Financing as Related to Joint Use Facilities

As a general rule, an REA borrower should not invest REA loan funds in joint use facilities in a given area to a greater extent than would have been required to provide facilities capable of rendering electric service alone in the same given area. This will raise no serious problem since the pole sizes in common use by REA borrowers are capable of accommodating certain telephone facilities and the contracts provide that the telephone companies shall pay any additional capital outlays required as well as rentals for the benefits they secure from the use of REA borrowers' poles and wires. Moreover, since telephone companies may also set and own joint use poles, an REA borrower should actually have a lesser investment in pole plant than would be required for separate line construction considering an area as a whole.

III. Telephone Company Qualifications

The sample forms of contracts and the recommended payments contained therein are predicated on the assumption that the telephone supplier is fully competent to carry its part of responsibility and that the REA borrower will not be put to any additional expense by reason of the telephone supplier's lack of knowledge or competence. Therefore, REA borrowers, before entering joint use agreements, should satisfy themselves that:

- A. the telephone company concerned is a financially responsible organization which is fully capable of bearing its proper share of the costs and responsibilities for any possible hazards.

B. the telephone company has available a qualified engineering and construction force to assure that its facilities on joint use lines will be installed in accordance with accepted construction standards and safety practices.

C. the telephone company has a maintenance and operations force capable, where necessary, of maintaining its own facilities when installed jointly with power lines.

IV. Insurance

The contract forms have no clauses concerning insurance coverage on the assumption that each party will carry its usual insurance and that in the event of any claims, liability will be assessed according to the legal responsibility that is determined.

REA borrowers should satisfy themselves that the local telephone companies with which they share joint use facilities either

A. provide adequate reserves for insurance, or

B. carry adequate insurance policies.

The Bell Telephone System, for example, is self insured and sets aside reserves against losses. However, smaller telephone companies should be required to have liability insurance coverage comparable to that carried by REA borrowers.

V. Safety

It cannot be too strongly emphasized that proper precautions should be taken in joint use construction to minimize possible hazards to both telephone and power linemen as well as to consumers. Adequate standards of safety can be established by observation of the proper construction, maintenance and safety practices and installation of power and telephone protective devices. The telephone companies should be held completely responsible for installation and operation of their own facilities (except as otherwise provided for carrier telephone facilities) and borrowers who find it necessary to advise their local telephone companies on proper construction and safety practices would be best advised themselves not to engage in joint use construction with such companies in view of the risks and costs involved.

All wires and appurtenances on joint use poles should be treated as hot when performing line work.

VI. Description of Contracts

A. Power Line Carrier Facilities, REA Form DS-209.

The highlights of this form of contract are

1. The telephone company is given the right to transmit communications over the power lines at frequencies in the 150-500 KC band, but there is to be no interference with the use of frequencies by the REA borrower outside that band.

2. The telephone company is given the right to have attached to the power lines and poles such equipment as is necessary to provide for carrier telephone service. All such equipment is furnished or paid for by and remains the property of the telephone company but for safety reasons most installation and maintenance of equipment installed on power system facilities is to be performed by the REA borrower in behalf of the telephone company.
3. The telephone company will reimburse the REA borrower for all expenses incurred to accommodate the telephone facilities and will pay an annual fee for each pole on which telephone equipment is installed. To simplify billing, unit telephone equipment assemblies have been established and uniform telephone company payments for installation, removal and maintenance work performed by the REA borrower in connection with such units have been suggested in Exhibit B. These payments make allowance for average labor, material, transportation and overhead costs. If experience discloses that they vary too greatly from actual costs in any particular area, either party may request a revision annually.

The annual charge of \$1.00 for each pole of the REA borrower upon which the telephone company has attachments amounts to a leasing fee. The fee of

\$1.00 is purely nominal in view of the fact that there is no experience with the actual operation of carrier telephone systems on which there could be based an exact determination of any cost savings of this method of providing telephone service that might be shared between the telephone company and REA borrower.

Power consumption payments are based on estimates of the average power losses caused by the various types of telephone company equipment connected to or inserted in the power lines. The maintenance visit payment has been established to cover any work done by the Cooperative on any specific request from the Telephone Company. It is anticipated that maintenance jobs generally will involve single locations and that the work can be done in a single visit. The largest part of the cost of the maintenance visit is in travel time and motor vehicle expense, whether the trip involves replacement of a capacitor fuse or complete replacement of an isolating choke assembly.

4. If work is to be performed by the REA borrower on behalf of the telephone company that is not covered by the unit assemblies and costs set forth in

Exhibit B, additional reimbursement should be agreed upon. This would include, for example, replacement of poles or the initial installation of poles of greater height or class to accommodate the telephone company.

5. The contract term is 5 years and thereafter until terminated by 1 year's notice by either party.
6. All construction must be in accordance with the National Electrical Safety Code. The specifications and schematics of Exhibit A are illustrative only. A separate document entitled "CONSIDERATIONS OF MUTUAL INTEREST TO REA BORROWERS AND TELEPHONE COMPANIES IN INSTALLING AND MAINTAINING EQUIPMENT USED FOR CARRIER TELEPHONE SERVICE" is attached, dated July 9, 1947. This document provides installation drawings and engineering information that can be readily changed when justified without necessitating changes in the basic contract.

B. General Agreement for Joint Use of Wood Poles, REA Form DS-210.

This form of contract is intended to be used in areas where widespread joint use of facilities is contemplated to achieve savings in pole plant costs. This form of

contract provides that:

1. Each party may own joint use poles and license the other to make attachments thereto.
2. Each party reserves the right to exclude any of its facilities from joint use.
3. Each party is responsible for the installation and maintenance of its own facilities on the joint poles. The owner is to maintain its poles.
4. The owner will install a normal joint pole, as defined, which is suggested as a 35-foot, class 6 pole for new construction. If a pole of greater height and class than normal is required, the additional investment in excess of the cost of a normal pole is paid by the party requiring it. A shorter or lighter pole than normal may be installed by mutual agreement when suitable for specific locations.

NOTE: Class 6 is the suggested strength for a normal pole on the assumption that the normal pole will carry the usual single-phase power circuit plus four (4) telephone wires.

5. Where existing poles must be replaced to make them suitable for joint use, the owner will set new normal poles and assume the cost of transferring its own facilities to the new poles. The licensee will pay the owner the value in place of the replaced poles, plus the cost of removal less salvage, as provided in Article VIII and Appendix A of the contract. If poles more costly than normal poles are required to meet the licensee's needs, the licensee will also pay the excess costs. In addition, where an existing pole must be replaced to accommodate the licensee's service drop, the licensee will also pay the owner the difference between the cost of the new pole and a new pole of the same size as the replaced pole. Appendix A of the contract establishes tables of costs to permit ready calculation of payments due.
6. When poles must be erected between existing poles to make a line suitable for joint use, they will be erected at the sole expense of the licensee but will be the property of the owner. Each party will install its own attachments to such poles.
7. The licensee will pay a standard annual rental fee per pole to the owner for the privilege of occupying joint poles. Poles used for the sole

purpose of providing clearance between the facilities of the two parties, such as secondaries and services, are not considered as joint poles and are not subject to rental fees. To simplify agreement on whether a pole provides clearance or support, the following interpretation is suggested. Where individual services of either party (secondaries for the REA borrower and service wires for the telephone company) are involved, single pole crossover attachments shall be treated as clearance attachments under the provisions of Article VIII without regard to any support which may be supplied by the crossing pole. The term "service wires" for the telephone company means a service to a single subscriber which may consist of either insulated or open wire conductors.

The fees suggested in Appendix B of the contract are designed to reflect and share the savings in cost realized by joint use of poles. The fees are based on average costs per mile of separate and joint pole lines in various sections of the country and make allowance for costs to the owner and licensee of modifying existing line to allow joint use, as well as making allowance for extra costs to the licensee of making arrangements to occupy joint poles.

The rental fees payable by REA borrowers to telephone companies are higher than those they receive because rural telephone systems ordinarily employ smaller poles than power lines and incur a larger increase in cost than power systems in supplying poles suitable for rural joint use. The rental fees may be adjusted by mutual agreement at any time after 5 years from the signing of the contract and at subsequent intervals of not less than 5 years.

8. The first page of Appendix B is self-explanatory in its description of the basic principles followed in arriving at the rental payments suggested in Appendix B. While the telephone cost figures employed were those appropriate to Bell System Companies, the same principles can be used for determining equitable rental payments for joint use with any telephone company.

The following example of rental calculations will illustrate the method utilized in arriving at the suggested payments in Appendix B:

Sample Calculations of Telephone Company Rental Payment to REA Borrower

Separate rural telephone pole line (Note 1)	\$350 per mile
Separate rural power pole line (Note 1)	<u>\$450 per mile</u>
Sum of separate pole line costs	\$800 per mile
Power System owned pole line suitable for joint use	\$540 per mile
Added Telephone Company costs on joint line (Note 2)	\$100 per mile
Added Power System costs on joint line (Note 3)	<u>\$ 10 per mile</u>
Total	\$650 per mile
Total Savings to both organizations \$800 - \$650	\$150 per mile
Telephone Company's share of savings based on respective cost of separate lines: $\frac{350}{800}$ or 44% (Note 4)	\$ 66 per mile
Assumed annual charge (Note 5)	10%

Tel. Rent per mile	Equals	Annual charge saved by Tel. Co. through not having to build a separate line	Less	Telephone Com- pany's share	of	Total savings in annual charges
Tel. Rent per mile	Equals	10% of (\$350-100)	Less	44%	of	10% of \$150
Tel. Rent per mile	Equals	\$25.00	Less	\$6.60	Equals	\$18.40

At 14 poles per mile, the rental payment is $\frac{\$18.40}{14}$ Equals approximately \$1.30 per pole.

Note 1: Per mile costs are those of bare poles in place, including right-of-way, clearing, engineering and overhead in addition to direct installation labor and material costs. Such costs will be mutually agreed upon when joint use contract is executed.

Note 2: Includes such factors as:

- (1) Allowance for Telephone Company's share of costs for additional poles (if required) for Telephone Company's benefit
- (2) Allowance for additional cost of stringing telephone wire under energized power circuits
- (3) Additional protection features (99A and 104A protectors) on telephone circuits
- (4) Allowance for engineering and survey costs.

Note 3: Includes only item (2) of Note 7.

Note 4: An average value of 45% was used in the agreement form.

Note 5: No specific annual charge is fixed in the agreement. In the negotiations with the Bell System, a range of annual charges was considered as well as the appropriateness of a differential between the annual charges that apply to telephone company and REA borrower operations. However, the use of 10% results in rentals approximately equivalent to those in the agreed upon table in Appendix B of the contract form.

Note 6: Includes only item (3) of Note 2

Sample Calculations of REA Borrower Rental Payment to Telephone Company.

Separate rural telephone pole line	\$350 per mile
Separate rural power pole line	<u>\$450 per mile</u>
Sum of separate pole line costs	\$800 per mile
Telephone Company owned pole line suitable for joint use	\$540 per mile
Added Telephone Company costs on joint line (Note 6)	\$ 20 per mile
Added Power System costs on joint line (Note 7)	<u>\$ 90 per mile</u>
Total	\$650 per mile
Total Savings to both organizations \$800 - \$650	\$150 per mile
Power System share of savings based on respective cost of separate lines: $\frac{\$450}{\$800}$ or 56% (Note 8)	\$ 84 per mile
Assumed annual charge (Note 5)	10%

Power System Rent per mile	Equals	Annual charge saved by Power System through not having to build a separate line	Less	Power Sys- tem's share	of	Total savings in annual charges
Power System Rent per mile	Equals	10% of (\$450-90)	Less	56%	of	10% of \$150
Power System Rent per mile	Equals	\$36.00	Less	\$8.40	Equals	\$27.60

At 14 poles per mile, the rental payment is $\frac{\$27.60}{14}$ Equals approximately \$2.00 per pole.

Note 7: Includes such factors as:

- (1) Allowance for additional cost of placing facilities over telephone wires
- (2) Attachments on additional poles
- (3) Allowance for engineering and survey costs.

Note 8: An average value of 55% was used in the agreement form.

9. The contract term is 25 years and thereafter until terminated by 3 years' notice by either party.

C. Application -- Permit for Joint Use of Poles, REA Form DS-211.

This form of contract was developed for use where widespread joint use of poles is not contemplated. It will find use in such cases as the elimination of structural difficulties that may arise at crossing points or when common occupancy of a few poles on one side of a highway is necessary. It is also a convenient means of recording those poles that are in joint use. This form of contract provides that:

1. The licensee shall reimburse the owner for any work necessary to make poles suitable for joint occupancy.
2. A nominal fee of \$1.00 per pole is established as the annual rental. No differential in rental fees payable

by telephone companies and REA borrowers is warranted here since the owner is reimbursed at the outset for any extra costs.

3. No rental fee is payable for clearance attachments of service drops of either party.

4. The owner may revoke the attachment permit on 60 days' notice and the licensee may terminate the permit on 30 days' notice.

VII. Procedure for Executing Contracts

The contract forms for Power Line Carrier Facilities, Form DS-209, and for Joint Use of Wood Poles, Form DS-210, provide for approval by the Administrator of REA. In accordance with the usual procedures, three copies of a contract signed by the parties thereto should be forwarded to the Engineering Division of REA. Two approved copies will be returned to the borrower, one for the borrower's files and one for the telephone company. If an officer other than the President or Vice-President of a telephone company signs the contract, evidence of the officer's authorization to sign on behalf of the company should be attached unless otherwise filed with REA.

The form of Application-Permit for Joint Use of Specific Poles, Form DS-211, does not call for submission to REA for approval and will be subject only to review in the field by the Engineering Division.

Under the contracts for Power Line Carrier Facilities, Form DS-209, and for Joint Use of Wood Poles, Form DS-210, a specific request and authorization must be made each time it is desired to make attachments to poles and wires. The REA borrower and telephone company should establish procedures complementary to the contracts for establishing working relationships.

VIII. Construction Standards

Any type of joint use of poles should conform to the requirements of the National Electrical Safety Code except as the requirements of local authority may be more stringent.

1. For power line carrier installations, installation drawings and other engineering information are supplied in the attached document dated July 9, 1947, and entitled "Considerations of Mutual Interest to REA Borrowers and Telephone Companies in Installing and Maintaining Equipment Used for Carrier Telephone Service."
2. For joint use of poles, suggested standards based on the National Electrical Safety Code are contained in E.E.I. Publication No. M12, "Joint Pole Practices for Supply and Communication Circuits" and Part 5 thereof entitled "Special Considerations for Long Span Joint

Use." These are available from Bell System companies and from the Edison Electric Institute, 420 Lexington Avenue, New York 17, N. Y., at a price of \$1.25.

IX. Billing and Accounting

Exhibit B of the agreement form for Power Line Carrier Facilities, REA Form DS-209, and Appendix A of the agreement form for Joint Use of Wood Poles, REA Form DS-210, are designed to simplify and expedite the billing procedures for amounts that may be due the owner from the licensee for work done to make facilities suitable for joint use. Any cost figures or values that are left blank in the sample forms should be supplied from locally applicable data. Thus, the billing for work to be done in modifying existing lines can be predetermined and differences of opinion with respect to the charges in individual cases can be minimized. On the average, billings should approximate actual costs even though individual cases may show wide differences.

The internal accounting of REA borrowers need not be complicated by the billing procedures established under the joint use contracts and should be undertaken in the usual manner to reflect actual costs as closely as is warranted.

A. Accounting for Changes in Plant

All changes in size or location of poles owned by REA cooperatives should be handled

for accounting purposes in accordance with the Manual of Work Order Procedure and Related Instructions. Thus, if a pole is removed and replaced, a retirement and construction work order should be prepared and cost recorded in the appropriate work in progress account in the usual manner. Amounts to be received from the telephone companies in accordance with the terms of the contracts are to be based on the costs as agreed upon in the contracts and will not, therefore, be the same costs as reflected on construction and retirement work orders. Any payments received from the telephone companies in connection with plant changes should be credited to Account 144, Retirement Work in Progress. If the amount received is more than sufficient to cover any balance in this account because of such charges, the difference should be debited to Account 144 and credited to Account 265.1/393, Donations in Aid of Construction.

B. Accounting for Revenues and Expenses

1. Telephone Company Rental Payments.

Revenues to be received from the telephone company for pole rentals should be credited

to Account 610, Rent from Electric Property and charged to Account 125.2, Other Accounts Receivable. The contract provisions dealing with rental payments require that a complete record be kept of all poles of either party which are in joint use; that any rentals to be billed shall be on a yearly basis according to the number of joint poles in use on the day preceding the specified billing date. The rent per pole will be in accordance with the contract appendices. Payments by borrowers for taxes and assessments on their own property should normally be charged to appropriate tax expense.

2. Installation and Maintenance Work for Telephone Companies.

All revenues and expenses involved in installation, repair or maintenance of the telephone company's attachments to poles, or for other work done for the telephone company on a reimbursable basis as provided for in the contracts, should be included in appropriate separate subaccounts of 520.1 and 520.2. Charges to telephone companies for maintenance service should be debited to Account 125.2, Other Accounts Receivable, when the credit to Account 520.1 is recorded.

3. Energy Sales.

Amounts to be received from the telephone company for electric energy consumed in connection with carrier service should be credited to Account 608, Other Electric Service, and charged to Account 125.2, Other Accounts Receivable.

4. Payments to Telephone Companies.

Payments to a telephone company for rental of its poles or for its plant changes necessitated because of the joint use agreement are to be charged to the appropriate rent expense account, namely, 776, Rents. Payments to telephone companies for tree trimming and other normal operating or maintenance work done by them for a borrower should be charged to appropriate expense accounts.

C. Capital Credits

Any revenues received as pole rentals or for electric energy losses in connection with carrier service should not be included in the base for patronage capital distribution.